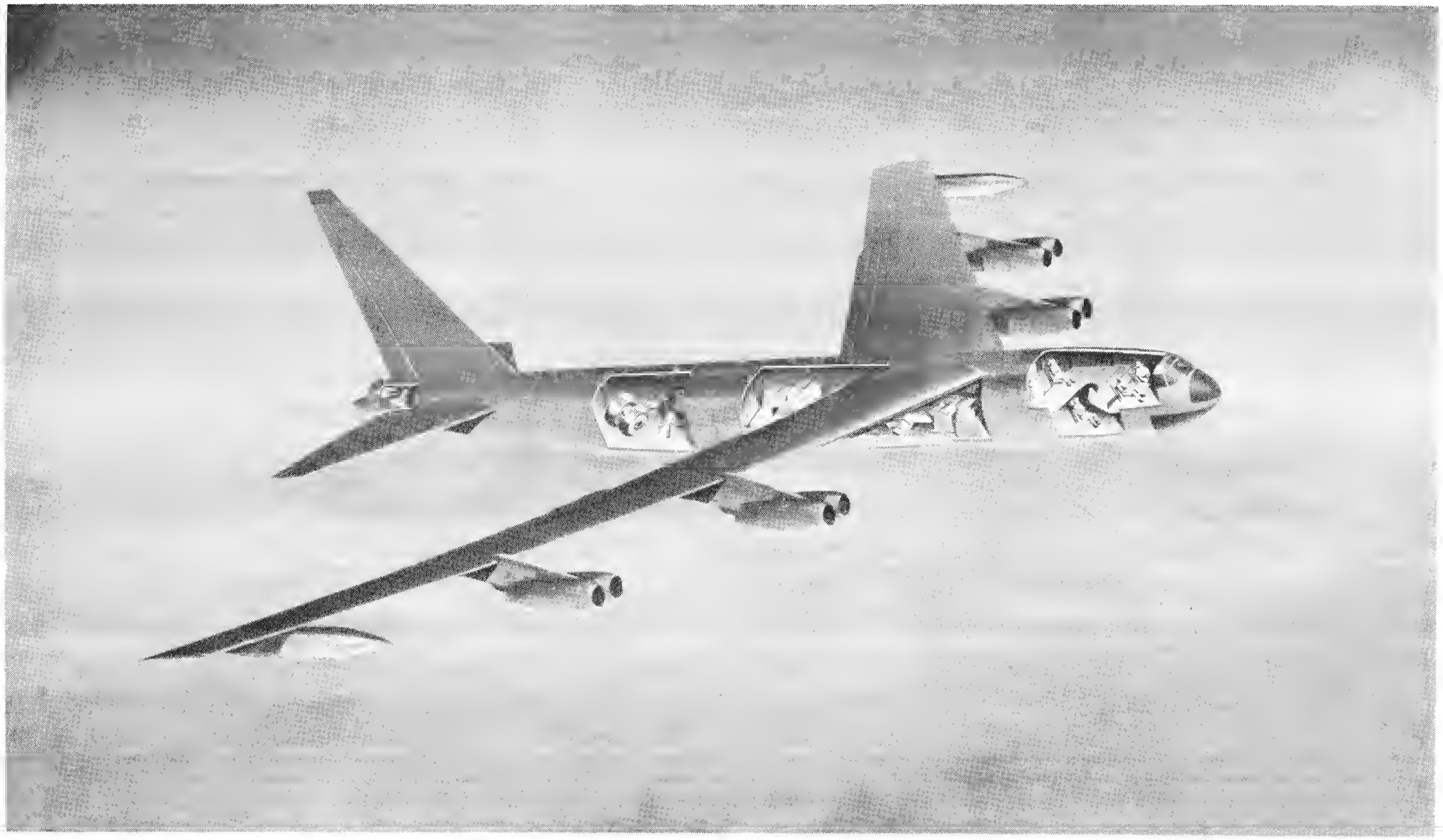
SECRET SERVICE



Standard Aircraft Characteristics

BY AUTHORITY OF
THE SECRETARY
OF THE AIR FORCE

B-52C

STRATOFORTRESS

Boeing

EIGHT J57-P-19W

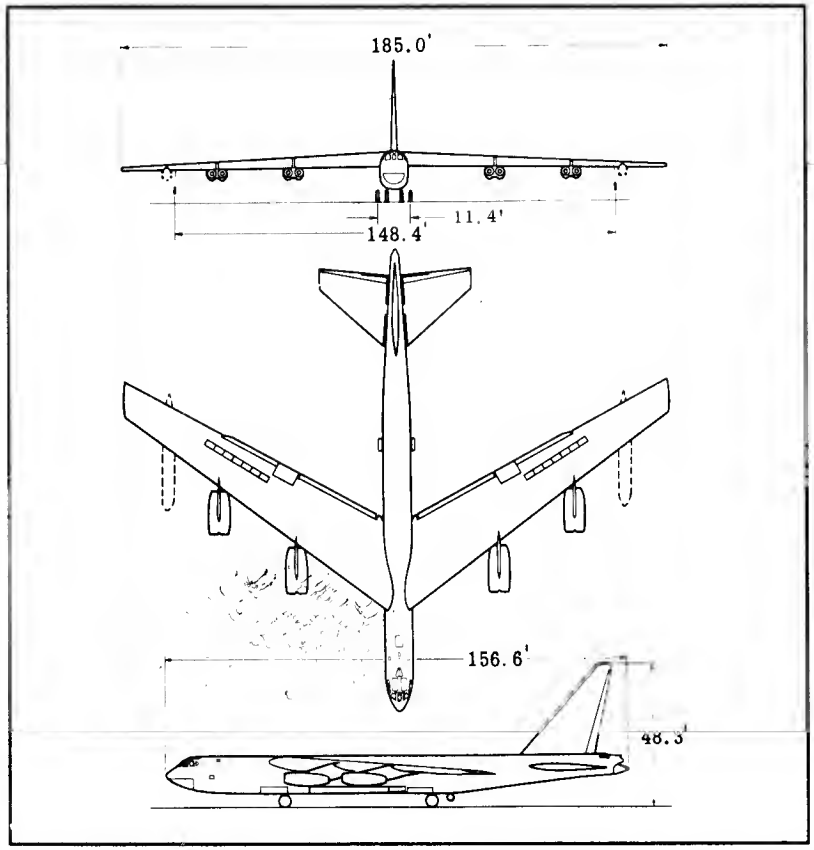
PRATT & WHITNEY

CLASSIFICATION CANCELLED
11 APR 56 (OR CHANGED TO Confidential)
BY AUTHORITY OF Issue of 1 Jul 58 DOD-DIR 5200.10
(INDIVIDUAL OR ...)
BY ... AFMRH 12/17/59 28 Mar 61
(NAME & GRADE OF INDIVIDUAL MAKING CHANGE)

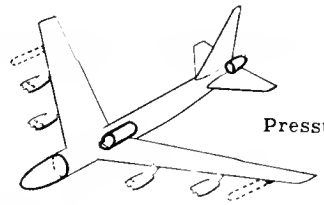
SECRET

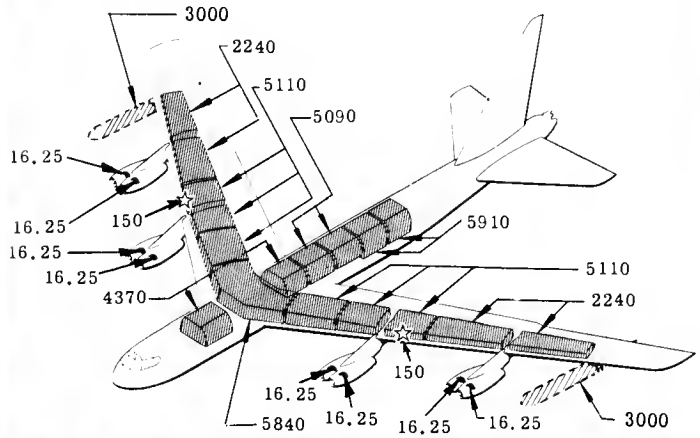
B-52C
(RECONN. VERSION)

4th Ed addn #14

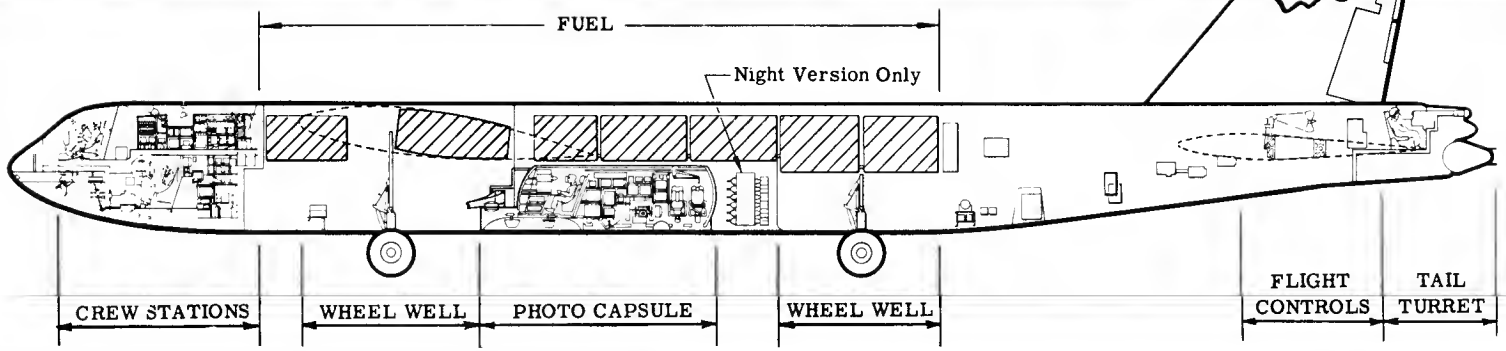


Wing Area	4000 sq ft	Wing Section (root)	BAC 233 19.31
Aspect Ratio	8.55	(tip)	BAC 236 9.56
		M.A.C.	275.5"





Fuel (Gal) ☆ Water (Gal) Oil (Gal)



POWER PLANT

No. & Model . . . . (8) J57-P-19W
Mfr . . . . . Pratt & Whitney
Engine Spec A-1649-G
Type . . . . . Axial
Length . . . . . 157.7"
Diameter . . . . . 40.5"
Weight (dry) . . . . . 3970 lb
Tail Pipe . . . . . Fixed Area
Augmentation . . . . . Water

Note: At present there are no requirements for ATO

ENGINE RATINGS

S.L.Static	LB -	**RPM	- MIN
Max:	*12,100 -	6450/9900	- 5
Mil:	10,500 -	6150/9900	- 30
Nor:	9000 -	5900/9650	- Cont

*Wet
**First figure represents low pressure spool; second figure represents high pressure spool.

Mission and Description

Navy Equivalent: None Mfr's Model: 464-201-6

The principal mission of the B-52C (Reconn Version) is day and night photo, weather and electronic reconnaissance.

The normal crew of eight consists of pilot, co-pilot, (2) bombardier-navigators, tail gunner, ECM operator, and (2) reconnaissance electronic operators.

Automatic cabin pressurization, heating and ventilation are provided for crew comfort during normal and combat operation.

Ejection seats for emergency escape are afforded the crew except for the tail gunner, who bails out after jettisoning the tail section containing the gun turret.

Flight control, throughout the speed range from limit dive speed to landing speed, is accomplished by use of spoilers and ailerons on the wing; elevators on an all-movable horizontal tail; and a rudder on a fixed vertical tail surface. The spoilers also function as air brakes used in landing.

Air is bled off the engines for thermal anti-icing of the wing and tail surface leading edges.

Other features are single-point ground and aerial refueling, braking parachute for decreasing landing roll distance and a steerable landing gear to aid in cross-wind take-off and landing. The airplane utilizes the A-14 Auto Pilot and the N-1 Compass.

The B-52B (Reconn Version) has the reconnaissance capsule in the bomb bay.

Major differences from the B-52B (Reconn Version) are the installation of -19W engines in place of -1W engines and an increase in fuel tank capacities.

B-52B airplanes contained within A.F. Serial Nos. 53-377 thru 53-398 will also have -19W engines.

Development

Design Initiated . . . . . Dec 53
First Flight . . . . . Mar 56
First Acceptance . . . . . (est) Aug 56

WEIGHTS

Loading	Lb	L.F.
Empty	168,737(C)	
Basic	172,480(C)	
Design	†453,000	2.0
Combat	*289,900	2.3
Max T.O.	**450,000	2.0
Max In-Flt	‡450,000	2.0
Max Land	270,000	

(C) Calculated
* For Basic Mission
** Excludes 2500 lb water
† Max taxi, wt, 10,000 lb bomb
‡ Limited by structure

FUEL

Location	No. Tanks	Gal
Wg, outbd	2	4480
Wg, ctr	1	5480
Wg, inbd*	4	10,220
Fus, fwd*	2	4370
Fus, ctr*	1	5090
Fus, aft*	1	5910
Wg, drop	2	6000
	Total	41,550

Grade JP-4
Specification MIL-F-5624

OIL

Nacelle . . . . 8 . . . . (tot) 130
Specification MIL-L-7808A

WATER

Wg, L.E. 2 300
*Self-Sealing

DIMENSIONS

Wing
Span . . . . . 185.0'
Dihedral (chord plane) . . . 2°30'
Incidence (root) . . . . . 6°
Sweepback (LE) . . . . . 36°58'
Length . . . . . 156.6'
Height (overall) . . . . . 48.3'
Height (fin folded) . . . . . 20.8'
Tread (outrigger) . . . . . 148.4'
(main gear) . . . . . 11.4'

BOMBS

No.	Class (lb)
24	M-120A1 . Flash Bombs . 165

GUNS

No.	Type	Size	Rds ea	Loc
4	M-3	.50	600	Tail, tur

CAMERAS

No.	Type	Lens
	Multi Camera Station	
4	K-38	36"
	or	
1	K-38	12"
	Tri Camera Station	
3	T-11	6"
	or	
1	K-37 (vertical)	12"
	or	
1	K-36	24"
1	*O-15 Radar Recording	

*No fixed station

ELECTRONICS

UHF Command AN/ARC-34
Liaison AN/ARC-21X
IFF AN/APX-25
Radar Beacon AN/APN-76A
ECM Trans (2) AN/APT-6
ECM Trans (1) AN/APT-9
ECM Trans (2) AN/ALT-7
ECM Recv'r (1) AN/APR-14
Interphone AN/AIC-10
Bombing Sys MA-6
Nav. Recv'r AN/ARN-14
Fire Control Sys A-3A

See page 7 for additional equipment.

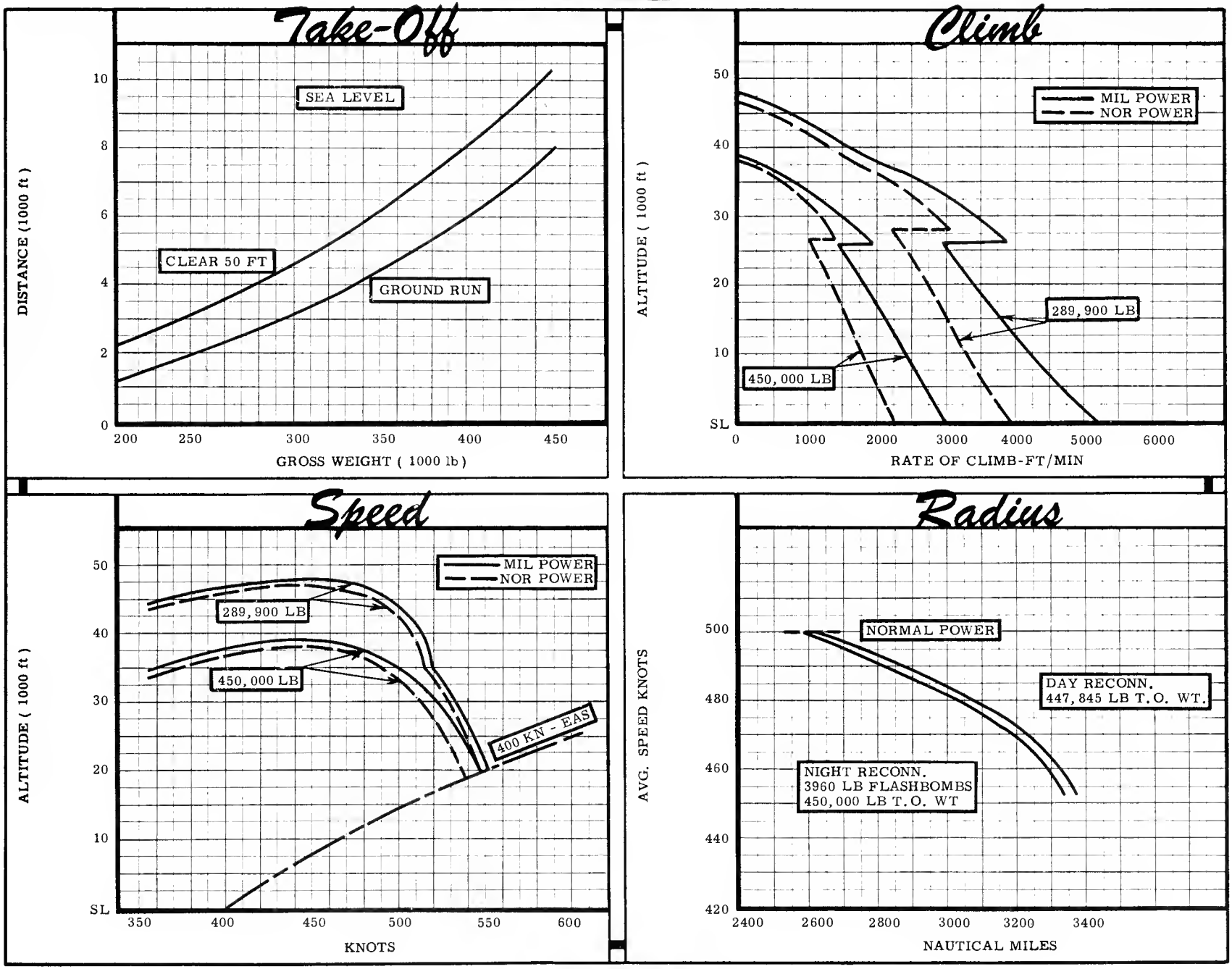
Loading and Performance — Typical Mission

CONDITIONS			BASIC MISSION NIGHT I	BASIC MISSION DAY II	FERRY RANGE NIGHT III
TAKE-OFF WEIGHT	⑦	(lb)	450,000	447,845	447,955
Fuel at 6.5 lb/gal (grade JP-4)		(lb)	268,160	270,075	270,075
Payload (Flashbombs)		(lb)	3960	None	None
Wing loading		(lb/sq ft)	112.5	112.0	112.0
Stall speed (power off)	⑨	(kn)	147	147	147
Take-off ground run at SL	①	(ft)	8000	7880	7900
Take-off to clear 50 ft	①	(ft)	10,300	10,180	10,190
Rate of climb at SL	③	(fpm)	2225	2240	2235
Rate of climb at SL (one engine out)	②	(fpm)	2440	2450	2450
Time: SL to 20,000 ft	③	(min)	10.8	10.7	10.7
Time: SL to 30,000 ft	③	(min)	18.0	17.9	17.9
Service ceiling (100 fpm)	③	(ft)	37,550	37,700	37,650
Service ceiling (one engine out)	②	(ft)	37,050	37,200	37,150
COMBAT RANGE	④	(n. mi)	———	———	6800
COMBAT RADIUS	④	(n. mi)	3335	3370	———
Average cruise speed		(kn)	453	453	453
Initial cruising altitude		(ft)	33,500	33,600	33,600
Target speed		(kn)	476	476	———
Target altitude		(ft)	44,950	45,150	———
Final cruising altitude		(ft)	50,200	50,200	50,200
Total mission time		(hr)	14.74	14.91	15.04
COMBAT WEIGHT		(lb)	289,900	291,100	193,600
Combat altitude		(ft)	44,950	45,150	50,200
Combat speed	②	(kn)	493	490	507
Combat climb	②	(fpm)	680	660	1210
Combat ceiling (500 fpm)	②	(ft)	45,850	45,800	54,050
Service ceiling (100 fpm)	③	(ft)	46,450	46,400	54,900
Service ceiling (one engine out)	③	(ft)	44,800	44,750	52,900
Max rate of climb at SL	②	(fpm)	5170	5145	7830
Max speed at optimum Alt.	②⑤	(kn/ft)	551/20,200	551/20,200	552/20,450
Basic speed at 35,000 ft	②	(kn)	519	519	525
LANDING WEIGHT		(lb)	193,500	193,500	193,600
Ground roll at SL	⑩	(ft)	2350	2350	2350
Ground roll (auxiliary brake)	⑥⑩	(ft)	2110	2110	2110
Total from 50 ft	⑩	(ft)	4000	4000	4000
Total from 50 ft (auxiliary brake)	⑥⑩	(ft)	3790	3790	3790

NOTES

① Take-off power
② Military power
③ Normal power
④ Detailed descriptions of RADIUS and RANGE missions given on page 6.
⑤ Limited by structure
⑥ With drag chute
⑦ Excludes 2500 lb water
⑧ Limited by fuel capacity
⑨ Initial buffet, flaps down, S. L.
⑩ Braking force limited to 40,000 lb.

PERFORMANCE BASIS:
(a) Data source: Flight test of B-52A
(b) Performance is based on powers shown on page 3.


Take-Off
DISTANCE (1000 ft)
SEA LEVEL
CLEAR 50 FT
GROUND RUN
GROSS WEIGHT (1000 lb)
Climb
ALTITUDE (1000 ft)
MIL POWER
NOR POWER
289,900 LB
450,000 LB
RATE OF CLIMB-FT/MIN
Speed
ALTITUDE (1000 ft)
MIL POWER
NOR POWER
289,900 LB
450,000 LB
400 KN - EAS
KNOTS
Radius
AVG. SPEED KNOTS
NORMAL POWER
DAY RECONN.
447,845 LB T.O. WT.
NIGHT RECONN.
3960 LB FLASHBOMBS
450,000 LB T.O. WT
NAUTICAL MILES

N O T E S

FORMULA: RADIUS MISSIONS I AND II

Take-off and climb on course to optimum cruise altitude at normal power. Cruise out at long range speed, increasing altitude with decreasing weight; external tanks are dropped when empty. Climb so as to reach cruise ceiling 15 minutes before reaching target. Run in to target at normal power, drop flash bombs on night mission, conduct 2 minutes evasive action and 8 minutes escape at normal power. Cruise back to base at long range speed and optimum altitudes; as an alternate, a 45,000 foot ceiling may be maintained on the return leg with no radius penalty. Range-free allowances are fuel for 5 minutes at normal power for take-off allowance, fuel for 2 minutes at normal power for evasive action, and fuel for 30 minutes maximum endurance (4 engines operating) at sea level plus 5% of initial fuel load for landing reserve.

FORMULA: RANGE MISSION III

Take-off and climb on course to optimum cruise altitude at normal power. Cruise out at long range speed, increasing altitude with decreasing weight; external tanks are dropped when empty. Land at remote base with only reserve fuel remaining. Range-free allowances are fuel for 5 minutes at normal power for take-off allowance and fuel for 30 minutes maximum endurance (four engines operating) at sea level plus 5% of the initial fuel load for landing reserve.

GENERAL DATA:

(a) Landing reserve for Basic Mission is equivalent to 810 nautical miles at cruise altitude.

PERFORMANCE REFERENCE:

Boeing document D-15134A, "Substantiating Data Report - Models B-52B (J57-P-19W engines), B-52C and B-52D Standard Aircraft Characteristics Charts", dated 21 January 1956.

REVISION BASIS:

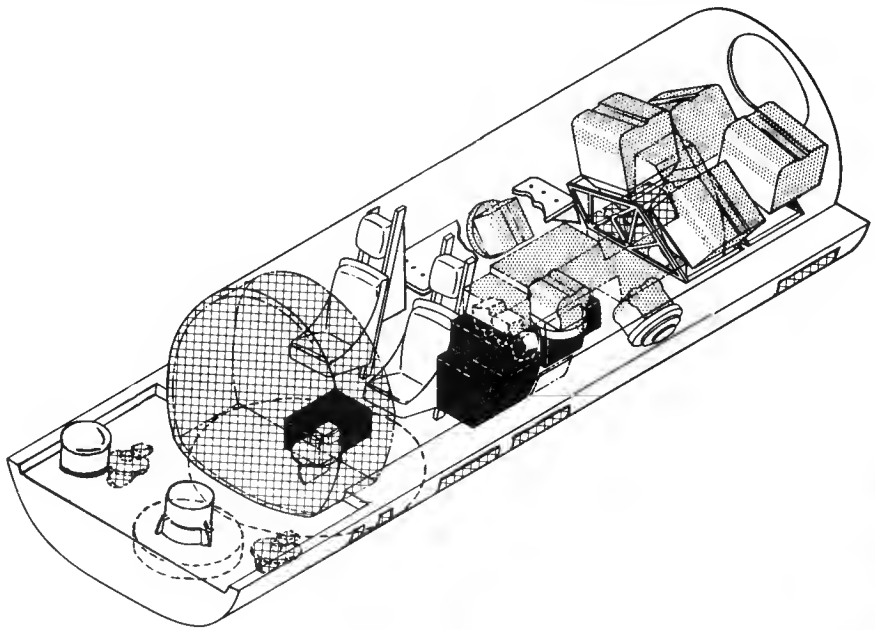
To incorporate latest flight test data.

SUPPLEMENTAL NOTES

PHOTO RECONNAISSANCE

ELECTRONIC RECONNAISSANCE

WEATHER RECONNAISSANCE



The following Electronic equipment is supplemental to that shown under Electronics on Page 3.

Carrier	Glide Path Rec.	(1)	AN/ARN-18
	Marker Beacon	(1)	AN/ARN-12
	Early Warning	(1)	AN/APS-54
	Chaff	(1)	AN/ALE-1
Capsule	Panoramic Receiver	(3)	AN/APR-8B
	Direction Finder	(2)	AN/ALA-6
	Pulse Analyzer	(2)	AN/ALA-5
	Recorder	(2)	AN/ANQ-1A
	ECM Receiver	(2)	AN/APR-9
	ECM Receiver	(1)	AN/APR-14
	Interphone	(2)	AN/AIC-10

SECRET

SECRET